What is claimed is:

1. An isolated polypeptide, comprising a human mannosyl transferase having substantially the same amino acid sequence as shown as in SEQ ID NO:2, or a functional fragment thereof.

2. The isolated polypeptide of claim 1, wherein said functional fragment further comprises a substrate binding domain.

3. An isolated nucleic acid, comprising substantially the same nucleotide sequence as shown as SEQ ID NO:1, or a fragment thereof.

4. The isolated nucleic acid of claim 3, further comprising encoding substantially the same amino acid sequence as shown as SEQ ID NO:2, or a functional fragment thereof.

5. The isolated nucleic acid of claim 3, wherein said fragment encodes a mannosyl transferase substrate binding domain.

6. The isolated nucleic acid of claim 3, wherein said fragment further comprises an about 15 nucleotide region sequence having substantially the same nucleotide sequence as SEQ ID NO:1.

7. An isolated polypeptide, comprising a human mannosyl transferase having substantially the same amino acid sequence as shown as in SEQ ID NO:4, or a functional fragment thereof.

8. An isolated nucleic acid, comprising substantially the same nucleotide sequence as SEQ ID NO:3, or a fragment thereof.

9. The isolated nucleotide sequence of claim 8, wherein said fragment comprises a 5' nucleic acid region from human chromosome 9 and a 3' nucleic acid region from human chromosome 11.

10. An isolated nucleic acid, comprising a human mannosyl transferase encoding nucleic acid and a single nucleotide polymorphism.

11. The isolated nucleic acid of claim 10, wherein said single nucleotide polymorphism is selected from the group consisting of SEQ ID NOS:16 to 117.

12. A method of diagnosing or predicting the susceptibility of a bipolar disorder, comprising:

(a) contacting a sample obtained from an individual with a probe selective for an altered mannosyl transferase sequence, and

(b) detecting binding of said probe to an analyte in said sample, wherein specific binding of said probe indicates the presence of an altered mannosyl transferase and occurrence or susceptibility of a bipolar disorder.

13. The method of claim 12, wherein said probe comprises substantially the same nucleotide sequence as shown as SEQ ID NO:1, or a fragment thereof.

14. The method of claim 12, wherein said probe comprises substantially the same nucleotide sequence as shown as SEQ ID NO:3, or a fragment thereof.

15. The method of claim 12, wherein said probe comprises substantially the same nucleotide sequence as shown as SEQ ID NO:5, or a fragment thereof.

16. The method of claim 12, wherein said probe comprises a binding agent having specific binding activity to a polypeptide encoded by substantially the same nucleotide sequence as shown as SEQ ID NO:3, or a fragment thereof.

17. The method of claim 16, wherein said binding agent is an antibody.

18. A method of diagnosing or predicting the susceptibility of a bipolar disorder, comprising:

(a) measuring an expression or activity level of mannosyl transferase in a sample obtained from an individual, and

(b) comparing said measured expression or activity level of mannosyl transferase to mannosyl transferase expression or activity levels from a reference sample, wherein a reduction of said measured expression or activity levels compared to said reference sample indicates the occurrence or susceptibility of a bipolar disorder.

19. The method of claim 18, further comprising contacting said sample with a probe comprising substantially the same nucleotide sequence as shown as SEQ

ID NO:1, or a fragment thereof, wherein said contacting is effected under selective hybridization conditions.

20. The method of claim 18, further comprising contacting said sample with a probe comprising substantially the same nucleotide sequence as shown as SEQ ID NO:3, or a fragment thereof, wherein said contacting is effected under selective hybridization conditions.

21. The method of claim 18, further comprising contacting said sample with a probe comprising substantially the same nucleotide sequence as shown as SEQ ID NO:5, or a fragment thereof, wherein said contacting is effected under selective hybridization conditions.

22. The method of claim 18, further comprising contacting said sample with a binding agent having specific binding activity to a human mannosyl transferase having substantially the same amino acid sequence as shown in SEQ ID NO:2, or a functional fragment thereof, and detecting the presence of specific binding of said binding agent.

23. The method of claim 22, wherein said binding agent is an antibody.

24. The method of claim 22, wherein said binding agent is a substrate analog inhibitor.

25. The method of claim 18, wherein said activity is measured by substrate conversion.

26. The method of claim 18, wherein said activity is measured by product formation.

27. The method of claim 18, further comprising measuring the presence of an intermediate of a lipid-linked oligosaccharide.

28. The method of claim 27, wherein said intermediate is lipid-linked $Man_6GlcNAC_2$.

29. The method of claim 18, wherein the expression or activity level of mannosyl transferase is measured be determining the presence of hypoglycosylated secretory proteins.

30. The method of claim 29, wherein said hypoglycosylated secretory proteins are characterized by a reduction in N-linked glycosylation.

31. A method of identifying a compound that modulates the activity a mannosyl transferase, comprising:

(a) contacting a sample containing a mannosyl transferase having substantially the same sequence as SEQ ID NO:2, or a functional fragment thereof, and a substrate with a test compound under conditions that allow conversion of substrate to product, and

(b) measuring the amount of substrate conversion, a change in the amount of substrate conversion in the presence of said test compound indicating that said compound has mannosyl transferase modulatory activity.

32. The method of claim 31, wherein said compound increases the activity of mannosyl transferase.

33. A transgenic non-human mammal expressing an exogenous nucleic acid encoding substantially the same amino acid sequence as shown as SEQ ID No:2.

34. The transgenic non-human mammal of claim 33, further comprising a disrupted mannosyl transferase gene.

35. The transgenic non-human mammal of claim 33, wherein said transgenic non-human mammal is a mouse.